

805 KAR 9:070. Directional and horizontal wells.

RELATES TO: KRS 349.015, 349.035, 349.040(3), 349.075, 349.120, 349.155

STATUTORY AUTHORITY: KRS 349.115

NECESSITY, FUNCTION, AND CONFORMITY: KRS 349.115 authorizes the Department for Natural Resources to promulgate all rules, administrative regulations, and amendments to implement the provisions of KRS Chapter 349, governing coal bed methane wells. KRS 349.110 requires the department to exercise supervision over the drilling, casing, plugging, and filling of all coal bed methane wells. This administrative regulation establishes the requirements for permitting directional and horizontal wells.

Section 1. Definitions. The definitions in KRS 349.010 and the following additional definitions shall apply to this administrative regulation:

- (1) "Abnormal pressure" means a reservoir pressure that exceeds the hydrostatic pressure of fresh water extending from the reservoir to the surface.
- (2) "Annulus" means the space between two (2) strings of casing or between a string of casing and the bore hole wall.
- (3) "Blow-out preventer" or "BOP" means a device installed on the surface or intermediate casing to prevent the escape of pressure either in the annulus between casing and drill pipe or in the open hole without drill pipe and which is used during drilling operations.
- (4) "Casing" or "casing string" means steel tubes or pipes installed in a well.
- (5) "Cement" means hydraulic cement properly mixed with water or with additives approved by the director, and which is used to fill the annulus of casing string or to plug the well.
- (6) "DES" means the State Disaster and Emergency Services Office, under authority of the Department of Military Affairs in Frankfort, Kentucky, with regional offices throughout the commonwealth.
- (7) "Directional and horizontal drilling" means the science of directing a well bore along a predetermined course to a "target" located a given distance from the vertical.
- (8) "Directional survey" means a survey taken while drilling, using continuous measuring technology, or a survey made through drill tools at intervals to accurately determine the location of the deviated well bore.
- (9) "Intermediate casing" means one (1) or more strings of pipe installed in a well in addition to the surface casing in which each string is smaller in diameter than the previous one.
- (10) "Intersection length" means the horizontal distance between the point at which the well penetrates the top of the intended formation and the end point within that formation.
- (11) "Long casing string" means the last casing installed in a well to be used for production or injection purposes.
- (12) "Measured depth" means the total depth measured in the well from the surface.
- (13) "Surface casing" means the first and largest diameter casing installed in a well; its primary uses are to make the bore hole stand up and to protect fresh water zones.
- (14) "True vertical depth" means the depth of the well from any point in the well being measured to the surface of the ground above the point being measured.
- (15) "Zone" means a layer of strata capable of producing or receiving fluids.

Section 2. Permit Requirements. Prior to drilling a directional or horizontal well, the applicant shall submit the following information:

- (1) An application for a permit to drill the well, with a cover letter from the applicant, shall be filed on Form CBM-2, as incorporated by reference in 805 KAR 9:020. A bond as required in KRS 349.120 and an application fee of \$300, pursuant to KRS 349.040(3), shall be submitted

with the application.

(2) Three (3) copies of a location plat satisfying the requirements of 805 KAR 9:020 (plan view), in addition to the following requirements:

(a) The surface location and proposed target formation identified by the Carter Coordinate system, latitude and longitude, and the single zone state plane coordinate system;

(b) The proposed course of the well; and

(c) The identification of the intersection length of the proposed well and the proposed producing formation. To avoid any conflicts with applicable well spacing requirements, a dashed line shall be drawn around the intersection length with regard to the spacing requirements in KRS 349.075. This distance shall be clearly shown in feet.

(3) In addition to the plan view required in this section, the operator shall submit three (3) copies of a plat which shows a vertical cross-section view of the area to be drilled by the well. This cross-section shall be prepared from the proposed "predrill hole" directional survey compiled by the contractor responsible for the directional control mechanism and certified as required by 805 KAR 9:020. The cross-section shall include the proposed course of the well from the well site to the target. The surface shall be located as zero in reference to the depth and the lateral distance from the well site and true vertical depths shall be shown for all of the following:

(a) The kick-off point or selected depth at which the deviation is started;

(b) The known coal seams to be intersected;

(c) The producing interval(s);

(d) The proposed producing formation(s); and

(e) The proposed target.

(4) If the permit is issued, the operator shall provide verbal or written notice to the department field inspector at least forty-eight (48) hours in advance of the commencement of drilling operations.

(5) The following shall be submitted within ten (10) days from the date of the well's completion:

(a) Three (3) copies of an amended plan view of the well location plat required in subsection (2)(a), (b), and (c) of this section, with the actual course drilled, the kick-off point and the actual target superimposed on the proposed well location plat. A correction in the target Carter Coordinates, latitude and longitude, and the single zone state plane coordinate system, if necessary, shall then be recorded by the department;

(b) Three (3) copies of the side or cross-sectional view plat for the actual path of the well required in subsection (3)(a) through (e) of this section, shall be amended to indicate the actual formation(s), coal seams, target, kick-off point; and

(c) Copies of all directional surveys certified by the operator and the contractor responsible for the directional survey. This survey shall be submitted for the entire well bore, and the operator shall be able to identify the path or depth of the well bore at any time during and after the drilling of the directional or horizontal well. The survey points shall be made at each tool joint or at any closer intervals.

(6) The operator shall satisfy applicable spacing requirements of offset mineral boundary lines and between wells for the actual drilled course of the well, its end point, the intersection of the well bore and the producing formations.

(7) The operator shall provide to all coal operators or owners affected by the drilling of a directional or horizontal well a copy of the predrill plat and cross-section plat described in subsections (2) and (3) of this section as required by KRS 349.015 for coal bed methane plats. Within ten (10) days after the well is drilled, the operator shall submit to the coal operator or owner the revised plats and deviation survey log required in subsection (5) of this section.

Section 3. Blow-out Prevention. The operator shall install a blow-out prevention device capable of withstanding a working pressure of 1500 psi and a test pressure of 3000 psi. This BOP equipment shall be tested at intervals necessary to maintain its ability to operate at rated capacity. The results of these tests shall be kept at the drill site and made available to department personnel at their request.

Section 4. Operator Noncompliance. An operator in noncompliance with the requirements of this administrative regulation is subject to the penalties established in KRS 349.155. (31 Ky.R. 1473; Am. 1967; eff. 6-8-2005.)